

1st of May last contains all that I have to say on this subject, I shall not reply to any further comments which Mr. Newport may think proper to publish unsupported by the production of the specimens which he professes to have described.

I am, Gentlemen, your very obedient servant,
J. O. WESTWOOD.

VII.—*Descriptions of Aphides.* By FRANCIS WALKER, F.L.S.

[Continued from vol. iii. p. 304.]

66. *Aphis Urticaria*, Kaltenbach.

Aphis Urticaria, Kalt. Mon. Pflanz. 57. 39.

This is a clustering species, and feeds on *Urtica dioica*, *U. urens*, *Rubus fruticosus*, *R. Ideus*, and on *Stachys sylvatica*?

The viviparous wingless female. It is small, dark green, elliptical or oval, convex, and velvet-like, with a rim on each side: the front is slightly convex: the feelers are black, dull yellow towards the base, and hardly half the length of the body; the first and the second joints are not angular; the fourth is much shorter than the third; the fifth is shorter than the fourth; the sixth is much shorter than the fifth; the seventh is nearly as long as the third, and much more slender than the preceding joints: the mouth is dull yellow; its tip and the eyes are black: the nectaries are pale yellow with black tips, and about one-twelfth of the length of the body: the legs are pale yellow; the knees, the feet, and the tips of the shanks are black. When young it is sometimes pale greenish or yellowish red, with white limbs.

1st var. The body is dark grayish red.

2nd var. Dark green mixed with pale green.

3rd var. Green, with a yellow head.

4th var. Dark yellow.

5th var. Pale yellow.

6th var. Dark green, mottled with pale yellow and with black.

7th var. Very dark green, or almost black: the feelers are rather more than half the length of the body: the nectaries are dull green with black tips, and about one-eighth of the length of the body.

8th var.? Dull green with a white bloom: the feelers are brownish, pale yellow at the base, and not near half the length of the body: the mouth is dark green: the tip of the abdomen is almost black: the nectaries are very dark green, or almost black, and one-eighth of the length of the body: the legs are pale yellow; the tips of the thighs are darker; the feet and the

tips of the shanks are brown. On *Stachys sylvatica* at the end of April.

The viviparous winged female. Is black : the abdomen is dark green ; the segments have black borders : the feelers are much shorter than the body : the mouth is paler towards the base : the nectaries are hardly more than one-twelfth of the length of the body : the legs are black ; the shanks excepting their tips are yellow : the wings are colourless and very much longer than the body ; the wing-ribs and the rib-veins are pale yellow ; the wing-brands and the veins are pale brown ; the second vein diverges a little more from the first than it does from the third ; the first fork of the latter vein usually begins after one-third, and the second long after two-thirds of the length of the vein ; the fourth vein is moderately curved, and the angle of the vein whence it springs is extremely slight. In the autumn.

1st var. The mouth is dull green with a black tip : the nectaries are about one-sixth of the length of the body : the thighs are yellow towards the base : the wing-ribs are pale green ; the veins are brown. At the end of May.

2nd var. The abdomen is very dark green : the feelers are as long as the body : the mouth is dull yellow, but black towards its tip : the nectaries are hardly one-sixth of the length of the body : the fore-thighs are dark yellow towards the base. In the middle of October.

3rd var. The body is black : the borders and the underside of the fore-chest and the abdomen are dark green : the feelers are as long as the body : the mouth and the nectaries are dull yellow with black tips, and the latter are as long as one-fourth of the body : the thighs are pale yellow at the base : the wing-veins are brown.

Length of the body $\frac{1}{2}$ – $\frac{3}{4}$ line ; of the wings $2\frac{1}{4}$ – $2\frac{1}{2}$ lines.

When it feeds on the bramble it is larger and paler than when it feeds on the nettle, and is much resorted to by *Formica fusca*.

67. *Aphis tetra-rhoda*, n. s.

The viviparous wingless female. This species feeds on the rose, and when full-grown is deep green, oval, very convex and plump, and covered beneath with a white bloom ; it is bristly and has six rows of tubercles on the back, and the middle rows are very distinct : the front is hardly notched : the feelers are nearly half the length of the body : the eyes are dark red : the nectaries have brown tips, and are about one-eighth of the length of the body : the legs are dark green, and rather long ; the feet and the tips of the shanks are brown. When young it is pale grass-green, slightly convex, and has a rim on each side, but its tubercles are indistinct : the feelers are about half the length of the body.

1st var. The body is red.

2nd var. The body is lilac.

3rd var. The body is blackish.

The viviparous winged female. Unfolds its wings in the middle of May: it is black and rather stout: the abdomen is dark green with a row of black spots on each side: the feelers are rather thick, and a little shorter than the body: the first and the second joints are slightly angular on the inner side of their tips; the fourth joint is but little more than half the length of the third; the fifth is a little shorter than the fourth; the sixth is about half the length of the fifth; the seventh is as long as the fifth: the tip of the mouth and the nectaries are black, and the latter are as long as one-fourth of the body: the legs are long; the thighs are yellow towards the base: the wings are colourless, and nearly twice the length of the body; the wing-ribs and the rib-veins are pale yellow; the wing-brands and the veins are brown; the second vein diverges much more from the first than it does from the third vein; the forks of the latter usually have their respective sources at one-third and at two-thirds of the length; the fourth vein is much curved near its beginning, but nearly straight in the latter part of its course; the angle whence it springs is slight.

Length of the body $\frac{5}{8}$ line; of the wings $2\frac{1}{2}$ lines.

68. *Aphis Cerasi*, Fabr.

Aphis Cerasi, Fabr. Ent. Syst. iv. 211. 6; Syst. Rhyn. 295. 6; Kalt. Mon. Pfl. i. 45. 31.

Cerasaphis, Amyot, Ann. Soc. Ent. Fr. 2^{me} série, v. 477.

It feeds on the wild and on the cultivated *Cerasus Avius* from April till November, and its large swarms on the shoots of this tree are sometimes injurious to the fruit; it occasionally dwells on the peach, and its colour is then rather paler, especially towards the head.

The viviparous wingless female. The eggs are hatched in April, and the young Aphides are red or reddish brown, but as they grow they acquire a darker colour, and are convex, plump, and shining, and have a brassy tint on the back: the limbs are brown: the feelers are black at the base, and about one-third of the length of the body: the eyes are dark brown: the suckers of the mouth are red, and can be thrust out to some distance: the legs are rather short and thick. When full-grown it is coal-black: the body is exceedingly plump and nearly round; the punctures on each side are very distinct: the feelers are yellow towards the base, and nearly as long as the body: the nectaries are straight, and as long as one-sixth of the body, and have sometimes pale tips: the thighs at the base and the shanks except their tips are

more or less yellow, and the latter are sometimes white. It swarms on the young shoots, which may be easily cut off and removed with all their inhabitants: the leaves which it infests become twisted, curled, and glutinous, and are often shed. It is infested by an *Aphidius* and by an *Allotria*. The front is nearly straight with a very distinct tubercle on each side: the feelers are sometimes about half the length of the body; the fourth joint is more than half the length of the third; the fifth is much shorter than the fourth; the sixth is much shorter than the fifth, though more than half its length; the seventh is about thrice the length of the sixth.

The viviparous winged female. This while a pupa is dark red: the feelers, the feet, and the tips of the four hinder thighs and of the shanks are brown; the feelers at the base and the legs with the above exceptions are yellow. The wings are unfolded in the beginning of June, and the insect is then black and shining: the borders of the fore-chest are dark red: the abdomen is dark brown: the feelers are as long as the body, and the nectaries are equal to one-sixth of its length: the mouth is pale yellow with a brown tip: the thighs towards the base and the shanks are yellow: the wings are colourless, and much longer than the body; the wing-ribs are pale yellow; the wing-brands are pale brown, and the veins are darker; the second vein diverges more from the first than it does from the third; the first fork of the latter begins before or at one-third, and the second fork at or after two-thirds of its length; the fourth vein is much curved near its source, but nearly straight in the latter part of its course; the angle whence it springs is very slight. The wings are milk-white for a while after they have been unfolded, and then the other limbs are also white, and the body is pale reddish brown. The fore-legs are considerably shorter than the hind-legs; the shanks are straight.

Variation in the wing-veins. The lower branch of the second fork is wanting.

The oviparous wingless female. This occurs in the middle of November: it is black, elliptical, and much smaller and narrower than the viviparous female: the feelers are rather more than half the length of the body; the fifth joint is hardly shorter than the fourth; the seventh is nearly twice the length of the sixth: the abdomen is slightly produced at the tip, and has two plates beneath like those of *A. Tiliæ*: the legs are rather short and stout; the hind-shanks are not dilated. The glutinous matter which covers its body when mixed with Canada balsam acquires a delicate green colour.

The winged male. This resembles the winged female, but pairs with the oviparous female in November. The sixth joint of the

feelers is about half the length of the fifth ; the seventh is about thrice the length of the sixth : the rib-vein begins to widen soon after the middle of the length of the wing, and emits the fourth vein near its tip ; the third vein is forked a little before one-third of its length, and forked again just after two-thirds of its length.

Length of the body $\frac{5}{4}$ -1 line ; of the wings $2\frac{1}{2}$ -3 lines.

69. *Aphis trirhoda*, n. s.

This species, which has a very quiet disposition, abounds on the rose in the spring, and having acquired wings in May, it emigrates thence to the columbine, where it feeds equally on the upper surface and on the under surface of the leaf, which often becomes red or purple from its injuries. It continues on that plant till the end of October.

The viviparous wingless female. It is elliptic, slightly convex, not shining, whitish green, covered with a white bloom, and remarkable for the peculiar softness and velvety appearance of its skin : the front is straight : the feelers are white, and about half the length of the body ; the first and the second joints are not angular ; the fourth is less than half the length of the third ; the fifth is shorter than the fourth ; the sixth is much shorter than the fifth ; the seventh equals the fifth in length : the eyes are dark brown : the mouth is white with a brown tip, and hardly reaches the middle hips : the tip of the abdomen and the nectaries are white, and the latter are one-twentieth of the length of the body : the legs also are white.

1st var. Pale yellowish green.

2nd var. ? or a distinct species. The body is elliptical, convex, dull, grass-green, with a very slight white bloom : the feelers are brownish green, and about one-fifth of the length of the body : the eyes are black : the mouth is dull green with a black tip, and does not reach more than half way between the fore and the middle legs : the nectaries do not rise above the surface of the body : the legs are dark brownish green, and rather short.

The viviparous winged female. This unfolds its wings at the end of May : it is pale greenish yellow : the head and the discs of the fore-chest, of the middle-chest and of the middle-breast are black : there is a large black spot on each side of the middle-chest : some short confluent black bands form a large irregular spot on the disc of the abdomen, on each side of which there is a row of black dots : the feelers are black, and a little shorter than the body : the mouth is pale yellow ; its tip and the eyes are black : the nectaries are pale yellow, and one-twentieth of the length of the body ; the third joint is rather stout ; the fourth is very slender, and less than half the length of the third ; the fifth is a little shorter than the fourth, and the sixth than

the fifth ; the seventh is much shorter than the sixth : the legs are also pale yellow ; the feet and the tips of the thighs and of the shanks are black : the wings are colourless, and much longer than the body ; the wing-ribs are pale yellow ; the brands and the veins are brown, and the tips of the latter are slightly clouded ; the second vein diverges much more from the first than it does from the third ; the first fork of the latter begins a little before one-third, and the second a little after two-thirds of its length ; the fourth vein is moderately curved, and the angle whence it springs is very slight. The pupa is pale yellow, and the wings when just unfolded are milk-white as usual.

1st var. The body, the mouth and the nectaries are green : the wing-ribs are pale green ; the brands are pale brown.

2nd var. The head, the discs of the fore-chest, of the middle-chest and of the middle-breast are brown, and so also are the spots on the middle-chest.

3rd var. The body is dark green.

4th var. The abdomen is without black dots.

5th var. The feelers are much shorter than the body.

6th var. Some of the latter joints of the feelers are pale with black tips.

7th var. The nectaries are one-twelfth of the length of the body.

8th var. The head, the discs of the fore-chest, of the breast, of the middle-chest, and a large spot on each side of the latter are brown : there are some short black confluent bands that form a large irregular spot on the disc of the abdomen, on each side of which there is usually a row of very small black dots.

9th var. Dark green : the head, the disc of the chest and that of the breast are black : the mouth, the nectaries, the wing-ribs and the wing-brands are green.

The winged male. It appears in the autumn and is much smaller than the winged female : the third joint of the feelers is rather stout ; the fourth is slender, and less than half the length of the third ; the fifth is a little shorter than the fourth, and the sixth than the fifth ; the seventh is much shorter than the sixth.

Length of the body $\frac{5}{4}$ —1 line ; of the wings $2\frac{1}{2}$ —3 lines.

70. *Aphis Brassicæ*, Linn.

Aphis Brassicæ, Linn. Syst. Nat. ii. 734. 12 ; Faun. Suec. 2205. 985 ; Fabr. Syst. Ins. ii. 388. 36 ; Ent. Syst. iv. 218. 41 ; Syst. Rhyn. 300. 41 ; Gmel. ed. Syst. Nat. i. 2209 ; Harr. Ex. 66. pl. 18. f. 3—6 ; Frisch. Ins. xi. 10. t. 3. f. 15 ; Berk. Syn. i. 120 ; Stew. El. ii. 110 ; Turt. ii. 207 ; Swammerdam, Ins. v. 535 ; Schrank, Faun. Boic. ii. 1. 119. 1228 ; Kalt. Mon. Pfl. i. 106.

81 ; Harris, Ins. New Engl. 190 ; Curtis, Journ. R. Agric. Soc. iii. 54. t. C. f. 5, 6.

A. Raphani, Schrank, Faun. Boie. ii. 1. 119. 1229.

A. Isatidis, Fonscol. Ann. Soc. Ent. x.

A. Floris-Rapæ, Curtis, Journ. R. Agric. Soc. iii. 55. t. C. f. 7, 8.

Cinara Raphani, Sir Oswald Mosley, Gard. Chron. i. 827.

C. Brassicae, Sir Oswald Mosley, G. C. i. 827.

Craumbaphis, Amyot, Ann. Soc. Ent. 2^{me} série, v. 478.

This *Aphis* abounds on the cabbage, *Brassica oleracea*, from the beginning of June to the beginning of November, and is found both in Europe and in North America. The matriarchs of the species dwell on wild plants, and their winged offspring fly to the cabbage, repose there on the underside of the leaf, and are soon surrounded by groups of wingless little ones.

The viviparous wingless female. This when very young is linear, pale green, and slightly powdered with white; the limbs are white: in the middle of June when full-grown it is pale yellowish green, slightly oval, very plump and convex, and most thickly covered with white powder: the front is convex: the feelers are pale yellow with brown tips and much shorter than the body; the first and the second joints are not angular; the fourth is less than half the length of the third; the fifth is a little shorter than the fourth; the sixth is much shorter than the fifth; the seventh is longer than the fourth: the eyes are black: the mouth is pale yellow with a brown tip: the nectaries are yellow, and hardly more than one-twentieth of the length of the body: the legs are pale yellow; the knees, the feet, and the tips of the shanks are black. It is extremely numerous and most abundantly powdered in the beginning of July: the limbs are almost black, and the nectaries are about one-twelfth of the length of the body: its colour when it sheds its skin is soft fresh velvet-like green, but it soon again assumes the dull dusty hue which harmonizes so well with the underside of the cabbage-leaf. The part which it infests becomes discoloured; it often emits a colourless honey-dew, is the prey of *Aphidius* (*Trionyx*) *Rapæ*, Curtis, and of an *Allotria*, and is much infested by *Leptus Aphidum*.

1st var. The body is dull olive-green, oval, short, and plump: the feelers are white with black tips, and nearly half the length of the body: the mouth is white; its tip and the eyes are black: the nectaries are black, and as long as one-twelfth of the body: the legs are white and moderately long; the feet and the tips of the shanks are black. In summer on *Spinacia oleracea*.

2nd var. The body is green, yellow towards the head, and covered with a whitish bloom: the feelers are yellow with black tips, and more than half the length of the body: the legs are yellow; the feet are black; the hind-shanks are green.

The viviparous winged female. While a pupa it much resembles the wingless female in colour, but is comparatively flat; when the wings are unfolded it is dark brownish green, and very often slightly covered with white powder: the abdomen is pale green with a very slight pearly tint on its disc; it has also a black line across each segment, and a row of black spots on each side: the feelers are black, and a little shorter than the body; the third joint is long and thick; the fourth is less than half the length of the third; the fifth is a little shorter than the fourth; the sixth is shorter than the fifth; the seventh is about twice the length of the fifth: the eyes are dark brown: the mouth is dull yellow with a brown tip: the nectaries are black, and as long as one-twelfth of the body: the legs are black; the thighs are pale green towards the base: the wings are colourless, and very much longer than the body; the wing-ribs are pale yellow; the wing-brands are very pale brown, and their tips are very slightly clouded; the second vein diverges more from the first than it does from the third vein; the forks of the latter usually begin respectively before one-third and before two-thirds of the length of the vein; the fourth vein is curved moderately and equally throughout its length; the angle of the brand whence it springs is distinct.

1st var. Greenish yellow varied with brown.

2nd var. The feelers are as long as the body.

3rd var. The mouth is green with a black tip: the thighs are wholly black.

4th var. The thighs and the middle shanks excepting the tips are pale yellow.

Length of the body 1 line; of the wings 3 lines.

Most of the winged race die during the growth of their progeny, and adhere to the leaf at a short distance from the groups of the wingless insects. This species feeds also on *Brassica Rapa*, *B. campestris*, *B. Napus*, *Sinapis arvensis*, *S. alba*, *S. nigra*, *Crambe maritima* (on this plant, especially in a wild state, it occurs in great profusion), *Raphanus sativus*, *R. Raphanistrum*, *Capsella Bursa*, *Diplotaxis tenuifolia*, *Lepidium sativum*, *Thalictrum minus*, *Spinacia oleracea*.

[To be continued.]

VIII.—On the *Animal of Kellia rubra*.

By JOSHUA ALDER, Esq.

To Richard Taylor, Esq.

DEAR SIR,

Newcastle-upon-Tyne, 18th June 1849.

MY remarks on the animal of *Kellia rubra* have unfortunately brought me into a controversy with Mr. Clark, a gentleman with whom it would have given me much greater pleasure to have